

REMARKS

Applicant has amended claims 1 and 5 to emphasize nonobvious features of the claimed pretreatment method for an electroless plating material and the claimed method for producing a member having a plated coating. The claim language of this amendment is supported by paragraph [0022] of the as-filed specification. No new matter has been introduced.

Applicant respectfully traverses the 35 U.S.C. § 112, first paragraph rejection of claim 1-3, 5-7, and 9 for allegedly not fulfilling the written description requirement. The Examiner asserted incorrectly that the specification provides no written support for claiming that the first solution contains ozone dissolved in an organic or inorganic polar solvent other than water, and further argued that the claim term "dissolved " is new matter. Office Action, page 3. Applicant respectfully disagrees at least for the following reasons. The present specification discloses an "ozone solution," e.g., at paragraph [0019]. The term "solution" is defined as "[t]he action of dissolving, or changing from a solid or gaseous to a liquid state, by means of a fluid or solvent" (emphasis added). Oxford English Dictionary (2nd ed. 1989) (a reprint of the relevant portion from Oxford English Dictionary Online attached). An "ozone solution," by definition, is ozone dissolved in a solvent. The present specification, therefore, either expressly or at least inherently discloses at paragraph [0019] that ozone is dissolved in a solvent.

Notwithstanding the above, solely to expedite prosecution, Applicant has amended claims 1 and 5 to delete the term "dissolved," rendering moot the § 112, first paragraph rejection of claims 1-3, 5-7, and 9.

Applicant respectfully traverses the 35 U.S.C. § 103(a) rejection of claims 1, 5, and 9 over JP 08-092752 to Ogisu et al. ("Ogisu") in view of JP 01-092377 to Harada et al. ("Harada"), and further in view of JP 11-244360 to Hattori et al. ("Hattori").

Amended claims 1 and 5 recite, among other things, a first solution containing ozone in an organic or inorganic polar solvent other than water, wherein the organic polar solvent is selected from the group consisting of methanol, isopropyl alcohol, N,N-dimethylformaldehyde, N,N-dimethylacetamide, dimethyl sulfoxide, N-methyl-pyrrolidon, hexamethylphosphoramide, formic acid, acetic acid, and mixtures thereof, and wherein the inorganic polar solvent is selected from the group consisting of nitric acid, hydrochloric acid, hydrofluoric acid.

Ogisu, Harada, and Hattori, alone or in combination, neither disclose nor suggest at least the above features of amended claims 1 and 5.

The Office Action admitted at page 4, lines 17-18 that Ogisu does not teach a first solution containing ozone in an organic or inorganic polar solvent other than water. The Examiner relied on Hattori allegedly to remedy this deficiency in Ogisu.

Hattori, however, does not disclose or suggest using any of the above-listed organic or inorganic polar solvents other than water, as recited in amended claims 1 and 5. Hattori instead teaches providing an organic solvent such as ethanol with water in an ozone-containing solution (Abstract, Solution; paragraph [0005]).

Furthermore, Hattori discloses using ozone solution in which ozone is dissolved in ethanol only as a treating fluid for sterilization and deodorization of natural rubber products such as masks, or oxidative decomposition of organic waste fluid (Abstract, paragraph [0003]), but does not disclose or suggest using it for electroless plating. One

of ordinary skill in the art therefore would not have been motivated to use Hattori's ozone solution in the electroless plating method disclosed in Ogisu.

Harada also fails to disclose or suggest using any of the above-listed organic or inorganic polar solvent other than water. Harada instead discloses using a mixture of ozone and oxygen or a mixture of ozone and air (paragraph [0005]).

For at least these reasons, claims 1 and 5 are not obvious over the cited combination of the references. See M.P.E.P. § 2143.

Claim 9 depends from claim 5, and incorporates all of the features of amended claim 5. Claim 9 is not obvious at least for the same reason as amended claim 5.

Applicant respectfully traverses the 35 U.S.C § 103(a) rejection of claims 2, 3, 6, and 7 over Ogisu in view of Harada and Hattori, and further in view of JP 10-088361 to Asakura ("Asakura").

Claims 2, 3, 6, and 7 depend from claim 1 and claim 5 respectively, and incorporated all of the features of amended claims 1 and 5. Asakura fails to remedy the above-discussed deficiency in the combination of Ogisu, Harada, and Hattori. Asakura also does not disclose or suggest using any of the above-listed organic or inorganic polar solvents other than water. Asakura instead discloses at paragraph [0011] using an alkaline solution containing a nonionic surfactant having a polyoxyethylene bond, examples of which include polyoxyethylene lauryl ether and polyoxyethylene sorbitant monostearate. Accordingly, claims 2, 3, 6, and 9 are not obvious over the cited references at least for the same reason as their respective base claims.

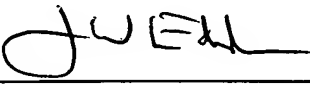
In view of the foregoing amendments and remarks, Applicant respectfully requests reconsideration of this application and timely allowance of the pending claims.

Please grant any extensions of time required to enter this response and charge any additional required fees to our deposit account 06-0916.

Respectfully submitted,

FINNEGAN, HENDERSON, FARABOW,
GARRETT & DUNNER, L.L.P.

Dated: June 24, 2009

By: 
James W. Edmondson
Reg. No. 33,871
(202) 408-4000

Attachment: a reprint of the relevant portion from Oxford English Dictionary Online.

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Oxford English Dictionary solution,...

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solution, *n.*

SECOND EDITION 1989

(sɒl(j)uːʃn) Forms: 4-5 **solucioun**, -**tioun**, 4-6 **solucion** (e, 6 **solucyon** (e, **solyssion**, 6- **solution**. [a. OF. *solucion*, -*tion* (mod.F. *solution*, = Sp. *solucion*, It. *soluzione*) or ad. L. *solūtĭo*-, *solūtĭo*, f. ppl. stem of *soluere* **SOLVE** v.]

I. 1. a. The action or process of solving; the state, condition, or fact of being solved.

1375 **BARBOUR** *Bruce* l. 259, I leve all the solucioun Till thaim that ar off mar renoun. c1420 **LYDG.** *Assembly of Gods* 2022 Yef hit had be nomore but for the solucion Of my demaunde and of thys straunge vysyon. 1526 *Pilgr. Perf.* (W. de W. 1531) 255 The solution of a questyon moued of his sayd blessed deth. 1551 **T. WILSON** *Logike* (1580) 26b, Thyne argument..needed then no solution at all. 1620 **T. GRANGER** *Div. Logike* 316 The answering and solucion of all his obiections against vs. 1664 **POWER** *Exp. Philos.* III. 191 The Solutions of all those former Difficulties are reserved for you..to gratifie Posterity withall. 1736 *Gentl. Mag.* VI. 476 The famous Mr. Leibnitz..own'd that the Solutions of such Problems as these..was a very difficult Task. 1784 **COWPER** *Task* II. 520 Knots worthy of solution, which alone A Deity could solve. 1838 **DE MORGAN** *Ess. Probab.* 93 The use of the tables at the end of this work, in the solution of complicated questions. 1879 *Cassell's Techn. Educ.* IV. 91/1 A difficult problem of mixed law and fact for solution by the judges.

b. A particular instance or method of solving or settling; an explanation, answer, or decision.

1382 **WYCLIF** *Dan.* ii. 25 A man..that shal telle to the kyng the solucioun. 1401 *Polit. Poems* (Rolls) II. 73 And so thes similitudes, with thes soluciones, ben not worthe the devellis dirt. 1432-50 tr. *Higden* (Rolls) III. 99 Daniel the prophete 3afe a solucion of a vision to Nabugodonosor in Caldea. 1509 **HAWES** *Past. Pleas.* XXXII. (Percy Soc.) 157 Now have I answered you your question, And I pray you of a lyke solucion. 1596 **Bp. W. BARLOW** *Three Serms.* iii. 126 This may serue for a short solution. 1667 **PEPYS** *Diary* 1 May, Expecting the solution of the Judges in this point. 1681 **H. HALLYWELL** *Melampronoia* Title-p., A Solution of the Chiefest Objections brought against the Being of Witches. 1711 **ADDISON** *Spect.* No. 21 ¶ 6 He might have found a better Solution for this Difficulty, than any of those he has made use of. 1774 **PENNANT** *Tour Scotl.* in 1772 233 This solution of mine is absolutely denied. 1813 **SIR H. DAVY** *Agric. Chem.* ii. (1814) 33 These facts afford a rational solution of this curious problem. 1854 **FROUDE** *Short Stud., Spinoza* (1867) 241 Undoubtedly it provides a solution for every difficulty. 1884 **J. QUINCY** *Figures of Past* 376 These hard names furnish no solution to the problem he presents to us.

c. Med. The termination or crisis of a disease.

1851 **DUNGLISON** *Med. Lex.*, *Solution*, means, also, with many, the termination of a disease:—a termination accompanied by critical signs;—and with others, again, it is synonymous with crisis.

†2. The action of releasing or setting free; deliverance, release. *Obs.*

a1513 **FABYAN** *Chron.* (1811) 407 He alonely opteyned nat solucion of his othe, but also..was declaryd kyng of Scicill. 1550 **BALE** *Eng. Votaries* II. 12 Immediately after thys solucyon or settinge at large of Sathau. 1655 **STANLEY** *Hist. Philos.* (1687) 88/2 As death is the solution of the Soul from the Body:—1659 **H. MORE** *Immort. Soul* III. xviii. After this solution of the Souls or Spirits of Wicked Men and Dæmons from their Vehicles.

†3. The action of paying; a payment. *Obs.*

1489 *Sc. Acts, Jas. IV* (1814) II. 222/2 Anent the Recuperatioun..of annuall Rentis in burgh, in falt of Solutioun and payment of the annuall. 1526 *Ord. Househ.* (1790) 229 To the intent the decompantants..may take out the Solutions entred into the said Bookes whereby they may strike their Lydgers. 1563-4 *Sarum Churchw. Acc.* (Swayne, 1896) 109 Allowans for suche solucyones. 1623 **COCKERAM** 1, *Solution*, a payment. a1722 **SIR J. LAUDER** *Decisions* Suppl. (1826) III. 280 It neither being by solution, nor other transaction, importing the consent of the creditor thereto.

4. The action of discharging or fulfilling.

1869 *Austin's Lect. Jurispr.* IV. II. 915 The Roman Lawyers themselves talk of..the *solution* or the *redemption* of obligations.

II. 5. a. The action of dissolving, or changing from a solid or gaseous to a liquid state, by means of a fluid or solvent; the state or fact of being so dissolved.

1390 **GOWER** *Conf.* II. 86 Ferst of the distillacion, Forth with the congelacion, Solucion, descencion [etc.]. 1471 **RIPLEY** *Comp. Alch.* II. i. in *Ashm. Theatr.* (1652) 135 Of Solucion now wyll I speke a word or two. 1612 **WOODALL** *Surg. Mate*

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Oxford English Dictionary solution,...

Wks. (1653) 274 *Solution*, a principal part of Chymical practice, whereby the incorporation of things coagulated, is dissolved and attenuated. **1665** K. DIGBY *Chym. Secr.* II. 221 Repeat these solutions seven or eight times. **1791** W. HAMILTON tr. *Berthollet's Dyeing* I. 5 The solution of indigo in the sulphuric (vitriolic) acid. **1800** HENRY *Epit. Chem.* (1808) 15 Mechanical agitation facilitates solution. **1870** TYNDALL *Lect. Electr.* 2 The effect in both cases is...the solution of the zinc, and the liberation of the hydrogen gas.

†b. The action of fusing, melting, or distilling by means of heat. Obs. rare.

1676 HALE *Prim. Orig. Man.* (1677) 9 They find by their solutions by Fire, some things which they call by these Names, to be that whereinto Bodies are dissolved. **1688** HOLME *Armoury* III. 425/1 *Distillation, or Solution*, is an extracting of Liquors by force of heat.

c. transf. Fusion, combination.

1820 KEATS *St. Agnes* xxxvi, The rose Blendeth its odour with the violet, — Solution sweet.

6. a. A more or less fluid substance produced by the process of solution (see 5); a liquid or semi-liquid preparation obtained by the combination of a solid with a solvent.

1594 PLAT *Jewell-ho.* III. 60 A good solution of salt in oile. **1677** GREW *Anat. Pl.* (1682) 297, I put to this Solution of Nitre, two Drachms of Sal Armoniac; which wholly and easily dissolved in the said Solution. **1705** ARBUTHNOT *Coins*, etc. (1727) 326 He commends a Solution of Opium in Water to foment the Forehead. **1790** *Phil. Trans.* 359 note, I have therefore confined the word solution to express the substance dissolved together with its solvent. **1811** A. T. THOMSON *Lond. Disp.* (1818) 469 A solution of lime should be put into the last bottle. **1855** *Orr's Circ. Sci., Elem. Chem.* 13 We term the liquid which is obtained a solution of salt in water. **1875** DARWIN *Insectiv. Plants* v. 80 Drops of a solution about as thick as milk.

fig. **1858** O. W. HOLMES *Aut. Breakf.-t.* iii. 24 Society is a strong solution of books.

b. = rubber solution s.v. RUBBER n.¹ 14.

1897 A. C. PEMBERTON *Complete Cyclist* vii. 190 The edges of the cut must be well cleaned and coated with solution. **1930** F. GARDNER *How to repair your Cycle* 20 Spread a thin layer of solution over the part that has been rubbed. **1974** S. TOWNROE *How to mend your Bike* 44 Never put on the patch until the solution has dried.

7. A dissolved state or condition. Freq. **state of solution**.

(a) **1802** PALEY *Nat. Theol.* xxi. §3 (1819) 333 Keeping things in a state of solution, that is to say, in a state of fluidity. **1837** P. KEITH *Bot. Lex.* 90 Animal or vegetable substances in a state of solution. **1878** HUXLEY *Physiogr.* 115 Certain chemical compounds in a state of solution.

transf. **1859** *Habits Gd. Society* v. 211 Their partners appear in a most disagreeable condition of solution.

(b) **1802** PLAYFAIR *Illustr. Huttonian Th. Earth* 494 The volume of the water necessary to hold in solution the materials of this shell. **1856** RUSKIN *Mod. Paint.* IV. v. ix. §4 As they congealed from their fluid state, whether of watery solution or fiery fusion. **1878** HUXLEY *Physiogr.* 202 The water generally holds silica in solution.

fig. **1870** LOWELL *Among my Bks.* Ser. J. 297 His [sc. Lessing's] was a mind always in solution. **1877** TALMAGE *Serm.* 338 A tear is agony in solution.

8. attrib., as **solution jar**, **lake**, **-tub**.

1867 Tomlinson's *Cycl. Usef. Arts* App. 14/1 The mouth of the solution jar was again closed. **1877** RAYMOND *Statist. Mines & Min.* 393 The liquid which runs out of the solution-tubs runs into tanks.

b. *Physical Geogr.* Denoting features and phenomena resulting from the solvent action of water, as **solution basin**, **depression**, **subsidence**, etc.

1894 *Pop. Sci. Monthly* June 281 In lime-stone countries, solution lakes are not uncommon. **1931** *Jrnl. Geol.* XXXIX. 641 (heading) Solution depressions in sandy sediments of the coastal plain in South Carolina. **1934** C. R. LONGWELL et al. *Outl. Physical Geol.* iv. 73 In some regions sinks, caverns, and solution valleys are so numerous that they give rise to a peculiar and characteristic topography with many surface depressions, irregular drainage patterns, and disappearing streams. **1939** A. K. LOBECK *Geomorphol.* iv. 145 Very large sinks or areas of depression are known as solution basins. **1954** *Geol. Mag.* XCI. 225 A lowering of surface by solution subsidence has been proceeding more or less continuously since Triassic times on this high moorland terrain. **1957** E. E. EVANS *Irish Folk Ways* ii. 18 The lowland of which it is the centre is diversified by occasional low hills, by intricate solution lakes and by glacial eskers. **1977** *Antiquaries Jrnl.* LVII. 189 Three large masses recovered from red clay-with-flints filling a solution pipe

III. 9. solution of continuity: a. *Med.* (Also of *connexion, of unity*.) The separation from each other of normally continuous parts of the body by external or internal causes.

1541 R. COPLAND *Galyen's Therap.* 2Aij, We haue sayd that there is a kynde of dysease, that is called solution of contynuyte. *Ibid.*, There be other kyndes of solutions of continuite. 1625 BACON *Ess., Of Vnity in Relig.* (Arb.) 423 As in the Naturall Body, a Wound or Solution of Continuity is worse then a Corrupt Humor. 1656 RIDGLEY *Pract. Physick* 44 This proceeds from solution of continuity of the Veins and Arteries. 1668 CULPEPPER & COLE *Barthol. Anat.* 1.xxviii. 67 In which case also it is necessary that there be a Solution of the Connexion of the Neck. 1707 FLOYER *Physic. Pulse-Watch* 101 The organic Diseases, and the solution of Unity, must be known by the Signs of the particular Diseases. 1748 HARTLEY *Observ. Man* 1.i. §1. 36 In manifest Solutions of Continuity occasioned by Wounds, Burns, &c. 1818 E. THOMPSON *Cullen's Nosologia Meth.* (1820) 264 *Vulnus*, a recent, bloody solution of continuity in a soft part, by a hard body. 1835-6 Todd's *Cycl. Anat.* 1. 794/1 The consequent solution of connection between the various parts of the body.

ellipt. 1580 BLUNDEVIL *Horsemanship* Tijb, If such solution or diuision be in a bone, then is it called a fracture. 1612 WOODALL *Surg. Mate Wks.* (1653) 86 The solution of a Veine is known by blood of red colour and thick substance.

b. *transf. and fig.* A breach, break, or interruption.

1654 BRAMHALL *Just Vind.* ii. (1661) 14 Schisme is..a solution of continuity in the body Ecclesiastick. 1656 tr. *Hobbes' Elem. Philos.* (1839) 475 Even the hardest things are broken asunder..by solution of their continuity begun in the outermost superficies. 1707 *Curiosities Husb. & Gard.* 77 The Solution of Continuity may hinder the Juice from mounting. 1750 FRANKLIN *Lett.* Wks. 1840 V. 243 If there be the least crack, the minutest solution of continuity in the glass. 1799 E. DU BOIS *Piece Family Biog.* II. 201 Some there are..who, admitting no solution of continuity in their story, deny any place of rest to..the wearied reader. 1819 SCOTT *Leg. Montrose* xxiii. Rents, and open seams, might presage a similar solution of continuity in your matrimonial happiness. 1863 TYNDALL *Heat* xii. 408 Magnificent gradations of color, one fading into another without solution of continuity. 1886 *Manch. Exam.* 9 Jan. 5/3 There will be no solution of continuity in this important department of public affairs.

10. The action of breaking up or separating; dissolution; bringing to an end.

1655 VAUGHAN *Silex Scint.* L'Envoy, Frustrate those cancerous, close arts, Which cause solution in all parts, And strike them dumb. 1664 H. MORE *Myst. Iniq.* iii. 6 The Death of Christ upon the Cross was the solution of the Ceremonial Law of Moses. 1689 LOCKE *Civil Govt.* §80 (1694) 225 Easie and frequent Solutions of Conjugal Society. 1899 *Westm. Gaz.* 30 Oct. 2/1 That Boer policy had not for its aim the solution of British supremacy in South Africa.

†11. The action of rendering loose or slack. *Obs.*

1681 tr. Willis' *Remaining Med. Wks.* Vocab., *Solution*, a loosning or weakning, as of the nerves or joynts.

IV. 12. Special Combs.: **solution heat treatment** = *solution treatment* below; **solution set** *Math.*, the set of all the solutions of some equation or condition; **solution treatment** *Metallurgy*, a process designed to render an alloy susceptible to age-hardening, by which it is first heated to make a particular constituent enter into solid solution and then quenched; so **solution-treat** *v. trans.*, **solution-treated** *ppl. a.*

1935 G. E. DOAN *Princ. Physical Metallurgy* vi. 192 This heating and quenching is called the 'solution heat treatment'. 1979 J. NEELY *Pract. Metallurgy & Materials of Industry* xiv. 187/2 Successful heat treatment depends on putting the copper into solid solution and trapping it there.

1959 ALLENDOERFER & OAKLEY *Fund. Math.* vi. 102 Given a universal set X and an equation $F(x) = G(x)$ involving x , the set $\{x | F(x) = G(x)\}$ is called the solution set of the given equation. 1963 WEBBER & BROWN *Basic Concepts Math.* viii. 166 The truth set of an equation is often called the solution set, and members of the solution set are called solutions of the equation. 1972 A. G. HOWSON *Handbk. Terms Algebra & Anal.* i. 5 Those objects of a given set which satisfy an open statement form the solution set of the statement relative to that set. Thus the solution set of $x^2 = 2$ relative to the real numbers is the set $\{+\sqrt{2}, -\sqrt{2}\}$. Relative to the rational numbers, the solution set of $x^2 = 2$ is empty.

1940 J. D. JEVONS *Metall. of Deep Drawing & Pressing* xv. 577 Rolled sheet could be 'solution-treated' to place it in a ductile condition. 1977 R. B. ROSS *Handbk. Metal Treatment & Testing* 207 Components which have been correctly Solution treated and aged are very often joined by [welding].

1952 *Jrnl. R. Aeronaut. Soc.* LVI. 235/1 With highly tapered spar booms it is advisable to machine in the solution-treated condition in order that any correction may be made before precipitation.

1931 *Metallurgist* VII. 12/2 The age hardening..of duralumin and a number of other alloys of similar type requires a previous heat treatment, which is frequently termed the 'solution' treatment. 1970 P. C. VARLEY *Technol. of Aluminium & its Alloys* v. 62 All solution treatment is carried out in forced air circulation furnaces.

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Oxford English Dictionary solution,...

Hence **solu**tional *a.*, pertaining to a solution.

1903 *Nature* 3 Dec. 103/2 The persistence of the solut**ional** nucleus.
